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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,354	09/27/2001	Rumo Satake	07977/285001/US5238	3893

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02/15/2005

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EXAMINER

LEFLORE, LAUREL E

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,354

Applicant(s)

SATAKE, RUMO

Examiner

Laurel E LeFlore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16, 17 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3, 4, 6-10, 16, 19-23, 25-27 and 29 is/are allowed.
- 6) ☒ Claim(s) 2, 5, 11-14, 17, 24 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040505</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-14 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 11 recites the limitation "the same signal line" in line 4 of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 2, 5 and 24 rejected under 35 U.S.C. 102(e) as being anticipated by Nakajima et al. 6,486,864 B1.

6. In regard to claim 2, Nakajima discloses a method of driving a liquid crystal display device comprising a step of simultaneously applying a common signal voltage to a plurality of pixel electrodes of a plurality of pixels connected to a signal line, thereby displaying a common grey-scale among the plurality of pixels connected to the signal

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line. See column 13, lines 55-62, in reference to figure 5, disclosing, "A voltage corresponding to an image signal for the row...is applied as a source voltage V_s to the source electrode 22 during the assist signal writing scanning period and the image signal writing scanning period. A plurality of such image signals are applied sequentially. A common voltage V_c is applied to the common electrode 25." Further see column 15, lines 45-49, disclosing, "The settings of the source voltage V_s and the common voltage V_c ...may be appropriately set for each of the gray-scale levels to be provided for the image signal." Also see column 13, line 18, disclosing that such processes are to be applied to a liquid crystal display. Note in figure 5 that the signal line is source electrode 22.

7. In regard to claim 5, Nakajima discloses a method of driving a liquid crystal display device wherein a first light emission color, a second light emission color, and a third light emission color are intermittently incident upon the liquid crystal display device. See column 13, lines 17-19, disclosing that the invention is "applied to a liquid crystal display device based on the field sequential color method". Also see column 2, lines 33-36, disclosing that in the field sequential color method, "the output color of the light source is switched among red, blue and green while an image corresponding to each output color is synchronously displayed."

8. In regard to claim 24, Nakajima discloses that the liquid crystal display device is driven in a field sequential system. See rejection of claim 5.

Claim Rejections - 35 USC § 103

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9. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. 5,774,100 in view of Ozawa 2001/0017610 A1.

10. In regard to claim 11, Aoki discloses LCD device comprising: a plurality of pixels and a plurality of pixel electrodes included in the pixels respectively (see figure 3, for example); and a first means for detecting pixels which are connected to a same signal line (see fig. 8B; column 6, lines 46-48, 62-column 7, line 4; column 9, lines 3-24). Aoki does not expressly detail displaying a common gray-scale, a second means and selecting a signal line and scanning line connected to the TFT. However, the patent of Ozawa is cited to teach that it is well known for LCD device to display the same gray-scale (see page 2, paragraphs [0020] and [0022]; pages 2-3, paragraph [0023]); a second means for simultaneously applying a potential of a signal voltage to pixel electrodes of the pixels (pages 1-2, paragraph [0014]; page 2, paragraph [0020]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to incorporate the method of displaying the same gray-scale and simultaneously apply a potential of a signal voltage to pixel electrodes as taught by Ozawa into the device of Aoki et al. because this will allow reduction of power consumption of Aoki's display device.

11. In regard to claim 12, Ozawa clearly teaches the second means for selecting the signal line connected to the detected pixel and the scanning line of on of the connected pixels (see page 2, paragraphs [0020], [0021]; page 3, paragraph [0024]).

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12. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. in view of Ozawa as applied to claims 11 and 12 above, and further in view of Koyama et al. 6,177,920 B1.

In regard to claims 13 and 14, Aoki as modified with Ozawa teach means for selecting a signal line and scanning line but has failed to teach that the means for selecting the scanning and the signal line has an address decoder. Koyama et al. clearly states that it is conventional to have an address decoder to select a signal line and a scanning line (see fig. 3, element 301; figure 13, element 1303; also see column 3, lines 19-22, 28-32; column 5, lines 35-37; column 7, lines 52-57; column 9, lines 44-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the address decoder of Koyama et al. in the display driving system of Aoki et al., since this will provide an excellent display which can be obtained with an improved yield (column 5, lines 42-43).

13. Claim 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. in view of Ozawa as applied to claims 11 and 12 above, and further in view of Nakajima et al. 6,486,864 B1.

In regard to claim 17, Aoki et al. in view of Ozawa discloses an invention similar to that which is claimed in claim 17. See rejections of claims 11-14 for similarities. Aoki et al. in view of Ozawa does not disclose that the liquid crystal display is driven in a field sequential system wherein light sources are composed of a first, second and third light emission color.

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Nakajima discloses a method of driving a liquid crystal display device wherein a first light emission color, a second light emission color, and a third light emission color are intermittently incident upon the liquid crystal display device. See column 13, lines 17-19, disclosing that the invention is "applied to a liquid crystal display device based on the field sequential color method". Also see column 2, lines 33-36, disclosing that in the field sequential color method, "the output color of the light source is switched among red, blue and green while an image corresponding to each output color is synchronously displayed."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Aoki et al. in view of Ozawa by driving it in a field sequential system wherein light sources are composed of a first, second and third light emission color, as in the teaching of Nakajima et al. One would have been motivated to make such a change based on the teaching of Nakajima et al. that such a driving method "produces a color display by using a black and white liquid crystal panel" (see column 2, lines 30-31). Also, such a driving method has been used before and is a conventional way of driving a liquid crystal display.

Allowable Subject Matter

14. Claims 1, 3, 4, 6-10, 16, 19-23, 25-27 and 29 are allowed.

15. The following is a statement of reasons for the indication of allowable subject matter: The cited prior art has failed to teach applicant's claimed invention, in which, "a response time of liquid crystal when a voltage value is changed from the first signal voltage to the second signal voltage is calculated, and in an order from a pixel in which

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the calculated response time of liquid crystal is long, the potential of the second signal voltage is applied to the pixel electrode of the pixel in the second sub-frame period"; "applying a potential of a first signal voltage to the first and second pixel electrode and applying a potential of a second signal voltage to the second pixel electrode, wherein a difference between an absolute value of the first signal voltage and the second signal voltage is larger than 0 volt and smaller than 0.5 volt"; and deciding an order of applying the second signal voltages to the plurality of pixel electrodes in accordance with a voltage difference between the first and second signal voltages of the corresponding pixel electrodes."

Response to Arguments

16. It is noted that the information disclosure statement file 5 May 2004 includes only U.S. Patents and U.S. Pre-Grant Publications and thus has been considered.

17. Claims 2, 5, 11-14 and 24 have been amended to overcome the 35 USC 112, second paragraph, rejections. These rejections are withdrawn. However, see the above new 35 USC 112, second paragraph, rejections.

18. In regard to claim 2, applicant argues on page 9 that Nakajima does not disclose a method in which "a common signal voltage is supplied to a plurality of pixel electrodes...thereby displaying a common gray-scale". However, see the above rejection of claim 2. Nakajima discloses a "voltage corresponding to an image signal for the row", which is V_s , as well as a common voltage V_c . A row is understood to include a plurality of pixel electrodes.

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19. In regard to claims 11 and 12, applicant argues on pages 9-10 that "neither Aoki or Ozawa" disclose the claim limitations of "a first means for detecting pixels which are connected to the same signal line and which are to be applied with a common signal voltage for displaying a common gray-scale among the pixels, from all of the pixels". However, see fig. 8B; column 6, lines 46-48, 62-column 7, line 4; column 9, lines 3-24, as cited in the above rejection, in which a signal line test section is disclosed. This signal line test section tests for defects in a signal line, thus detecting pixels connected to a signal line. Further, it is inherent that a pixel which receives a signal to display is detected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LEL

25 January 2005



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 07977-285001	Application No. 09/966,354
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Rumo Satake	
		Filing Date September 27, 2001	Group Art Unit 2673

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U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Sub-class	Filing Date If Appropriate
LEE	AA	4,090,219	May 16, 1978	Ernstoff et al.			
LEE	AB	4,750,813	Jun. 14, 1988	Ohwada et al.			
LEE	AC	4,907,862	Mar. 13, 1990	Suntola			
LEE	AD	5,327,229	Jul. 5, 1994	Konno et al.			
LEE	AE	5,428,366	Jun. 27, 1995	Eichenlaub			
LEE	AF	5,528,262	Jun. 18, 1996	McDowall et al.			
LEE	AG	5,594,569	Jan. 14, 1997	Konuma et al.			
LEE	AH	5,642,129	Jun. 24, 1997	Zavracky et al.			
LEE	AI	5,643,826	Jul. 1, 1997	Ohtani et al.			
LEE	AJ	5,923,962	Jul. 13, 1999	Ohtani et al.			
LEE	AK	6,078,304	Jun. 20, 2000	Miyazawa			
LEE	AL	6,188,379	Feb. 13, 2001	Kaneko			
LEE	AM	6,300,927	Oct. 9, 2001	Kubota et al.			
LEE	AN	6,320,568	Nov. 20, 2001	Zavracky			
LEE	AO	2003/0058210	Mar. 27, 2003	Yamazaki et al.			
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Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
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	AQ							
	AR							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
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	AT	
	AU	

Examiner Signature <i>Carol S. LeHore</i>	Date Considered 1/12/05
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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